I Claim:

1. A design assistance method for creating swing joint layout objects for interconnection among layout objects for use in a computer assisted design apparatus, the apparatus including an input means, a display device, a storage and a processor connected to the input means, the display including image data representative of layout objects and the storage including layout object data and layout object image data, comprising the steps of:

(a) retrieving layout object data of layout objects specified by the input means and image data graphically representing the specified pipe layout objects from the storage;

(b) collecting layout object data of the layout objects and the specified layout objects;

(c) retrieving design reference data which establishes a maximum jog-over distance;

(d) finding a first end of a source pipe layout object wherein the first end is not terminating in a layout object using the layout object data and the specified layout object data;

(e) finding a target pipe layout object end having a least distance within the maximum jog-over distance relative to the first end using the specified layout object data and the maximum jog-over distance;

(f) generating at least one swing-joint layout object interconnecting the first end and the target pipe layout object end;

(g) storing layout object data representing the swing joint layout object and adding the stored layout object data to the collection; and

(h) displaying image data representing the layout object data of the collection.

2. The design assisting method according to claim 1 wherein the layout object data further comprises functional data and selectively removing layout object data from the collection using the functional data.

3. The design assisting method according to claim 1 wherein finding a target pipe layout object end further comprises evaluating the first end for 180° rotation in order to attain the least distance.

4. The design assisting method according to claim 1 further comprising consolidating the layout object data in the design layout.

5. A design assisting apparatus for interactively creating swing-joint layout objects on a display device, comprising:

(a) means for determining a swing joint layout object relative to specified layout objects using a least swing distance within a maximum jog-over distance, the specified layout objects selected using an input means and comprising a source pipe layout object end a target pipe layout object end; and

(b) means for graphically displaying on the display device the determined swing joint layout objects relative to the specified objects.

6. A design assisting apparatus for creating swing-joint layout objects interconnecting a plurality of specified layout objects among layout objects displayed on a display device, comprising:

(a) an input means for specifying a pipe layout object image and a maximum jog-over distance;

(b) a first memory for storing layout object image data;

(c) a second memory for storing layout object data;

(d) a third memory for storing a process sequence wherein said process sequence retrieves layout object data of layout objects specified by the input means and image data graphically representing the specified pipe layout objects from a storage, collects layout object data of the layout objects and the specified layout objects, and establishes a maximum jog-over distance for swing joint interconnection between the specified layout objects;

(e) a processing means for finding a first end of a source pipe layout object wherein the first end is not terminating in a layout object using the layout object data and the specified layout object data, finding a target pipe layout object end having a least distance within the maximum jog-over distance relative to the first end using the specified layout object data and the maximum jog-over distance, generating at least one swing-joint layout object interconnecting the first end and the target pipe layout object end, storing layout object data representing the swing joint layout object, and adding the stored layout object data to the collection; and

(h) a display device for displaying image data representing the layout object data of the collection.

7. The design assisting apparatus according to claim 6 wherein the layout object data further includes functional data and the process sequence further comprises selectively removing layout object data from the collection using the layout object functional data

8. The design assisting apparatus according to claim 6 wherein the process sequence further comprises evaluating the first end for 180° rotation in order to attain the least distance.

9. The design assisting apparatus according to claim 6 wherein the process sequence further comprises consolidating the layout object data.